For more information please contact:
(o) 914-273-6811
www.rensols.com

Two Distinct Infrastructure Crises

- U.S. municipalities are *required* by federal law to spend approximately $1 trillion over the next 20 years to rehabilitate their deteriorating underground sewer and water pipeline infrastructure. While there is agreement that such projects serve the nation's best interests, municipalities face the unappealing prospect of paying for this rehabilitation work through the only means currently available: raising monthly taxes for water and sewer services in many cases by up to 500%.
- U.S. communications service providers have spent more than $90 billion in the last four years laying fiber optic cable to build "next generation" long-haul and metro-area networks, yet today's communications infrastructure remains inadequate because these networks reach less than 5% of potential customers. The exorbitantly high cost of using traditional methods to pull fiber in the "last mile" where it directly reaches customers prevents these companies from completing their networks and reaching a larger customer base. Without bridging this "last mile" gap, the communications industry will be unable to fulfill its role as the global economy's lifeblood in the 21st century.

The DPR Solution

Renaissance Integrated Solutions' ("RIS") proprietary dual purpose rehabilitation solution (the "DPR Solution") simultaneously solves both the pipeline infrastructure and "last mile" crises for the cost of one. The DPR Solution completely rehabilitates aging sewer, water, or natural gas pipelines and at the same time creates secure, accessible, and completely separate ubiquitous fiber optic conduit systems. The city-wide fiber conduit systems created by the DPR Solution directly reach enterprises and households in the "last mile" and support the delivery of high-demand "next generation" communications services that are unavailable on a widespread basis today. The DPR Solution is based on the pipe bursting technology developed by British Gas that has achieved deep market penetration over the past 25 years.

Significant Municipal Benefits

While the goal of traditional pipeline rehabilitation is simply to restore the *status quo ante* at significant expense borne by taxpayers, the DPR Solution (i) monetizes existing pipeline infrastructure through the lease of fiber conduits to communications service providers thereby reducing the tax burden on constituents, (ii) completely solves the environmental problems created by deteriorating pipeline infrastructure, (iii) mitigates overall pipeline rehabilitation project costs, (iv) revitalizes local economic landscapes by creating "all-digital" cities, and (v) bridges the "digital divide" through the delivery of numerous tangible benefits (*e.g.*, facilitating training and education) to all constituent groups irrespective of size, socio-economic status or geographic location.

In sum, RIS turns more than $1 trillion of desperately needed and federally mandated pipeline rehabilitation *problems into opportunities* that will shape national and global growth trajectories in the 21st century.

RIS Management Team:

RIS is managed by a group of executives who possess significant construction management, media and marketing, strategic planning, fiber and optical networking, legal/regulatory, and business development experience. With nearly 20 years of construction management experience, members of the team have pioneered many of the trenchless sewer rehabilitation technologies that are widely used today and also managed the majority of fiber construction projects in New York City for companies such as AT&T, MFS, and MFN. RIS has access to the appropriate personnel required for full-scale operations and will add other senior level executives to support its growth as needed.

Defending RIS' Market Position

The uniqueness of the DPR Solution enables RIS to capture significant share in markets estimated to be greater than $1 trillion. RIS will establish, sustain and defend its growth through the broad claims contained in its intellectual property.

The DPR Solution has multiple advantages over traditional pipeline rehabilitation technologies that do not simultaneously create a "last mile" fiber conduit system:

1. Only the DPR Solution provides a means of monetizing existing and embedded pipeline infrastructure assets.
2. Since the trenchless pipe bursting technology upon which the DPR Solution is based limits excavation to relatively small access pits, long sections can be replaced without the open trenches and heavy equipment required by competing open cut processes. As a result, trenchless pipe bursting is particularly valuable in urban environments because it limits the externalities associated with other sewer rehabilitation techniques, such as damage to the environment, harm to pedestrians and construction workers, and the costs associated with re-routing surface traffic and disrupting other existing underground infrastructure.
3. In comparison to other trenchless technologies, such as the cured-in-place process, only the DPR Solution solves the ever-present inflow and infiltration problems that cause detrimental sewage overflows by replacing the dilapidated pipe with an entirely new, long-lasting structure with water-tight fittings at each lateral service connection.

Other companies have developed solutions that typically use a small robot to install fiber conduit systems *inside an existing pipeline without rehabilitating the pipeline*. To date, no application of any such "pipe in a pipe" solution has been successful as all such solutions are troubled by a number of significant limitations, including:

1. The inability to rehabilitate the dilapidated pipeline, resulting in an outright failure to meet the rehabilitation mandates imposed upon municipalities by the federal government.
2. Placing fiber within a host pipe exposes the fiber to potentially damaging and hazardous materials that ordinarily travel through the host pipe and catastrophic events with a single point of failure. Communications service providers do not wish to put their valuable communications assets in harm's way with limited opportunity to access and repair these assets if damaged.
3. The creation of a situation where it is impossible to maintain one conduit system without jeopardizing the integrity of the other conduit system. Municipal public works departments consider this to be the greatest limiting factor for such "pipe within a pipe" solutions because the unfettered maintenance and operation of the host conduit system is their ultimate priority.

The DPR Solution's unique ability to rehabilitate the host conduit and simultaneously create a *completely separate* fiber conduit system suffers from none of these limitations and therefore better serves the interests of key stakeholders.

Patent Protection

While trenchless pipe bursting has been an accepted form of pipeline rehabilitation for more than 20 years, the DPR Solution is unique because it replaces the existing pipe with two separate conduit systems: one for the initial intended use and one surrounding it to carry fiber optic cable. The intellectual property of the DPR Solution is protected through broad claims in the United States by U.S. Patent Number 6,702,520 and in certain other countries through applications to the Patent Cooperation Treaty and those individual countries

The DPR Solution is based on the trenchless technology known as "pipe bursting," which has gained deep market penetration since its invention by British Gas approximately 25 years ago.

The DPR Solution simultaneously replaces the existing host pipe (*e.g.*, sewer, water, natural gas) with two completely separate conduit systems:

1. **One for initial intended use**
2. **A fiber optic conduit system**

The only solution that truly bridges the "digital divide" by establishing direct fiber optic connectivity with all buildings on pipeline system

The only solution that establishes a significant revenue source for municipalities through the lease of the fiber optic conduit system that helps offset a municipality's cost of pipeline rehabilitation